



CES8 AT-TN119-A 8 Port TI/EI Circuit Emulation Service Module

Circuit Emulation Service Enables Delivery of TI/EI over Ethernet Transport

Migration from TDM to a converged Ethernet-based network requires a means to compliment the delivery of next generation packet-based services with the delivery of traditional TDM-based services. The CES8 (AT-TN119) gives the iMAP the ability to provide transparent transport for 8 TI/EI circuits over an Ethernet network.

TDM to Ethernet interworking is achieved using the same industry standards for TDM Circuit Emulation Service over Packet (CESoP) being defined by the IETF, Metro Ethernet Forum, MPLS Forum, and ITU-T. This interworking technology is extremely robust and overcomes the challenges of delivering TDM services over an all IP packet network.

The CES8 automatically compensates for packet network congestion, blocking, QoS prioritization and multiple signal paths with varying latency which can lead to jitter, lost packets, duplicate packets, and out of sequence packet delivery.

Use the CES8 to deliver Private line TI/EI services, subtend a channel bank for derived 2W/4W legacy special circuits or for Business LAN services. Whatever the application, Service Provider SLAs will be honored when deployed with Ethernet Protection Switched Ring (EPSR) network topology. Expect five 9's (99.999%) reliability of SONET, but with the simplicity, efficiency and cost savings of Ethernet.

Part of Allied Telesis' IP Broadband Access Family

Whether it is broadband ADSL2+, FTTH or TI/EI circuits, the iMAP family is the ideal platform for last mile service delivery. The CES8 line card can be used with any of the iMAP family of carrier grade, IP Access platforms:

- iMAP 9700 (9RU, 17 service slots)
- iMAP 9400 (3RU, 7 service slots)
- MiniMAP 9100 (1RU, 3 service slots)

Provisioning, management, and diagnostics of subscriber ports can be accomplished from either the iMAP command line interface or the NMS.

The CES8 has been designed to survive the most rugged environmental conditions. It can be confidently deployed in either a central office or in outdoor enclosures withstanding extremes of heat, cold, and light exposure.

Key Features

- 8 TI/EI ports
- Pseudo-wire compliant to the SAToIP standard
- TI reach is selectable for short haul DSX-I or long haul TI
- Integrated jitter buffers absorb packet network delay variation
- Provides Layer 2 services using existing EI/TI circuits



Allied Telesis' iMAP family of integrated Multiservice Access Platforms

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Interface Specifications

Number of ports: 8
Connector: RJ-21 (Female)

TI Specifications

Line rate: 1.544Mbps
Line code: AMI or B8ZS
Framing: Unstructured mode
Jitter: ANSI T1.102, T1.403, GR-499-CORE
Wander: T1.403

EI Specifications

Line rate: 2.048Mbps
Line code: AMI or HDB3
Framing: Unstructured mode
Jitter: ITU-T G.823
Wander: ITU-T G.823

CES Specifications

Packetization: 16 to 1023 bytes
PDV Buffer: 74.432ms for TI, 56.112 for EI

Timing and Synchronization

Timing Source: Loop timed or pseudo-span timed
Holdover Accuracy: Stratum 4 local oscillator

Power Requirements

Maximum Power: 23W

Environmental Conditions

Operating Temp: -40C to 65C
Storage Temp: -40C to 75C
Relative Humidity: 5% to 95%, non-condensing

Regulatory Approvals

FCC Part 15 Class A/ANSI C63.4
EN 300 386 V1.3.1:2001-09/EN 55022:1998, Class A
VCCI Class A; ITE/ CISPR 22:1997 Class A
EN 300 386 V1.3.1:2001-09/EN 55022:1998, Class A
EN 300 386 V1.3.1:2001-09/EN 61000-4-3:1998
EN 300 386 V1.3.1:2001-09/EN 61000-4-6:1996
EN 300 386 V1.3.1:2001-09/EN 61000-4-4:1995
EN 300 386 V1.3.1:2001-09/EN 61000-4-5:1995
EN 300 386 V1.3.1:2001-09/EN 61000-4-2:1999
UL/cUL 60950: IEC60950
NEBS Level 3, GR-1089 Issue 3, GR63 Issue 2
USDA RUS

Ordering Information

CES8		
Model	Description	Part #
CES8	8 ports, TI/EI Circuit Emulation Service Module	AT-TN-119-A

iMAP 9x00 Chassis		
Model	Description	Part #
iMAP 9700	17-slot chassis with DC power with faceplates	AT-TN-250GF
iMAP 9700	17-slot chassis with DC power without faceplates	AT-TN-250G
iMAP 9400	7-slot chassis with DC power with faceplates	AT-TN-251GF
iMAP 9400	7-slot chassis with DC power without faceplates	AT-TN-251G
MiniMAP 9101	3-slot mini chassis with DC power	AT-TN-9101-A-80
MiniMAP 9102	3-slot mini chassis with AC power	AT-TN-9102-A-XX*

iMAP Common Control		
Model	Description	Part #
CFC24	24GbE switch controller card	AT-TN-401-B
GE3	3x GbE WAN interface card	AT-TN-301-A
CFC56	56 GbE switch controller card	AT-TN-407-A
XE1	10GbE WAN interface card	AT-TN-308-A
CFC12	12GbE switch controller card	AT-TN-408-A

Related iMAP Line Cards and Accessories		
Model	Description	Part #
POTS24	24-port, POTS Service Module	AT-TN-113-A
PAC24	24-port, POTS/ADSL2+ Combo w/Splitters, Annex A	AT-TN-123-A
SHDSL24	24-port, G.SHDSL Service Module	AT-TN-127-A
VDSL24	24-port, VDSL2 Service Module, Annex B	AT-TN-128-A
ADSL24SA	24-port, ADSL2+ w/Splitters, Annex A	AT-TN-129-A
CES8 Cable	CES8 RJ21 to Unterminated	AT-TN-C021-A-YY**
Filler	Full size service slot filler plate	AT-TN-M000-A

*Where XX = 10 for U.S. power cord = 40 for Australia power cord
= 30 for U.K. power cord = 50 for Europe power cord

**Where YY = 005 for 5 ft = 030 for 30 ft = 070 for 70 ft
= 010 for 10 ft = 040 for 40 ft = 080 for 80 ft
= 015 for 15 ft = 050 for 50 ft = 090 for 90 ft
= 020 for 20 ft = 060 for 60 ft

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